



United Kingdom of Great Britain and Northern Ireland

EDICT OF GOVERNMENT

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BS NA EN 1994-1-2 (2005) (English): UK National
Annex to Eurocode 4. Design of composite steel
and concrete structures. General rules.
Structural fire design

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MAGNA CARTA (1297)

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NATIONAL ANNEX

UK National Annex to Eurocode 4: Design of composite steel and concrete structures –

Part 1-2: General rules – Structural fire design

ICS 13.220.50; 91.010.30; 91.080.10; 91.080.40



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National Annex (informative) to BS EN 1994-1-2:2005, Eurocode 4: Design of composite steel and concrete structures – Part 1.2: General rules – Structural fire design

Introduction

This National Annex has been prepared by BSI Subcommittee B/525/4, *Composite structures*. In the UK it is to be used in conjunction with BS EN 1994-1-2.

NA.1 Scope

This National Annex gives:

- a) the UK decisions for the Nationally Determined Parameters described in the following subclauses of BS EN 1994-1-2:2005.
 - 1.1(16)
 - 2.1.3(2)
 - 2.3(1)P
 - 2.3(2)P
 - 2.4.2(3)
 - 3.3.2(9)
 - 4.1(1)P
 - 4.3.5.1(10)
- b) the UK decisions on the status of BS EN 1994-1-2:2005 informative annexes; and
- c) references to non-contradictory complementary information.

NA.2 Nationally Determined Parameters

NA.2.1 General

UK decisions for the Nationally Determined Parameters described in BS EN 1994-1-2:2005 are given in NA.2.2 to NA.2.9.

NA.2.2 Concrete strength classes [BS EN 1994-1-2:2005, 1.1(16)]

For strengths higher than C50/60 the recommendations given in BS EN 1992-1-2:2004, section 6 can be used.

NA.2.3 Parametric fire exposure [BS EN 1994-1-2:2005, 2.1.3(2)]

Use the recommended values.

NA.2.4 Partial factors for the fire situation – Mechanical properties, $\gamma_{M,fi,a}$, $\gamma_{M,fi,s}$, $\gamma_{M,fi,c}$, $\gamma_{M,fi,v}$ [BS EN 1994-1-2:2005, 2.3(1)P]

Use the recommended values.

NA.2.5 Partial factors for the fire situation – Thermal properties, $\gamma_{M,fi}$ [BS EN 1994-1-2:2005, 2.3(2)P]

Use the recommended values

NA.2.6 Member analysis and load reduction factors [BS EN 1994-1-2:2005, 2.4.2(3)]

The partial factors for use with equations 2.4, 2.5a and 2.5b should be obtained from the National Annex to BS EN 1990:2002.

NA.2.7 Thermal conductivity of concrete, λ_c [BS EN 1994-1-2:2005, 3.3.2(9)]

Use the upper limit value as recommended in Note 2.

NA.2.8 Use of advanced calculation models [BS EN 1994-1-2:2005, 4.1(1)P]

Advanced calculation models may be used.

NA.2.9 Buckling length of columns, L_{ei} and L_{et} [BS EN 1994-1-2:2005, 4.3.5.1(10)]

The following values can be used:

$$L_{ei} = 0.70$$

$$L_{et} = 0.85$$

NA.3 Decisions on the status of informative annexes

BS EN 1994-1-2: 2005, Annexes A, B, C, E, F and G may be used.

BS EN 1994-1-2: 2005, Annexes D, H and I should not be used.

Alternative guidance is given in NA.4.

NA.4 References to non-contradictory complementary information

References to non-contradictory complementary information cited in this National Annex can be found at www.steel-ncci.co.uk¹⁾.

¹⁾ In preparation

Bibliography

Standards publications

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN 1992-1-2:2004, *Eurocode 2: Design of concrete structures – Part 1-2: General rules – Structural fire design*

National Annex to BS EN 1990:2002, *UK National Annex for Eurocode 0 – Basis of structural design*

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